NOTE BY THE DIRECTOR GENERAL OF ARCHÆOLOGY IN INDIA ON THE WORK AND ORGANIZATION OF THE PROVINCIAL SURVEY IN BURMA.

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From—J. H. MARSHALL, Esq., Director General of Archæology in India,

To—The Secretary to the Government of India.

I HAVE the honour to submit herewith, for your consideration, a general note on the work and organization of the Provincial Archæological Survey in Burma, and to ask that, as the Local Government has postponed their decision on several questions pending the receipt of this note, it may, if approved by you, be transmitted to them at an early date.

JHM 1904

BURMA

Note by the Director General of Archæology on the work and organization of the Provincial Survey in Burma.

I propose, in the course of the following pages, first, to indicate the extent of the work which lies before the Provincial Survey in the listing of antiquities, in the conservation of monuments and in epigraphy, together with the lines on which it should be conducted; secondly, to offer some suggestions concerning the office establishment (and its accommodation), necessary to carry on the work satisfactorily; and to conclude with some brief notes on the more important of the monuments which I personally inspected, and the measures to be recommended for their protection. With the other branches of archæological work it is unnecessary to deal at present; for epigraphy, conservation and the listing of antiquities will for several years to come demand the full time and whole-hearted attention of the Archæological Superintendent.

Listing of antiquities.

2 In 1883, under the orders of the Government of India, lists of archæological remains in *Lower Burma* were called for from district officers; and the late Dr. Forchhammer, who was then Government Archæologist, was asked to make a selection from them of such monuments as were, in his opinion, worthy of repair or conservation. The revision of the preliminary list for Arakan alone took Dr. Forchhammer about 7 years to bring to completion, and the number of monuments, which was put down as 11 by the district officers, was raised by him to 66. Dr. Forchhammer's task, we may surmise, was carried out in a somewhat desultory fashion, but it is obvious from the foregoing figures that he must have found the preliminary lists then compiled practically worthless, and that a personal inspection of all the monuments in the Arakan division was necessary if the revised list was to be made at all adequate for the purpose for which it was intended. Of the other preliminary lists called for from *Lower Burma*, none have yet been revised and there is every reason to fear that they are all as defective as Dr. Forchhammer found those of Arakan to be. The list furnished for Pegu, for instance, which I was able personally to test, is astonishingly incomplete, omitting, as it does, the collection of Kalyani inscriptions, the Kalyani Ordination Hall, and the Shwethayaung recumbent Image, the three most celebrated monuments in the locality, after the famous Shwehmawdaw Pagoda.

3. In view of the deputation of Dr. Führer, in 1894, to report on archæological remains in Burma generally, the Deputy Commissioners of *Upper Burma* were asked to supply initial lists of monuments in their districts, and these lists were subsequently printed. Judging from such of them as I was able to examine, they appear to be no less defective than those for Lower Burma. To take the Mandalay district as a case in point, on pages 1 and 2 of the list

A Pros. Dec 1895, Nos. 1 to 8.

mention is made of only 9 buildings of archæological interest, and many of the most magnificent specimens of wood carving, like the Queen's Monastery, and the Patan and Thudama Zayats in Mandalay town, and other no less beautiful monuments at Amarapura, are utterly ignored. It is the same with the catalogue for Pagan (pp. 9-11); it includes neither the Shwegugyi Pagoda, which has now been placed on the A list, nor the Nagayon Pagoda, which has been placed on the B list. But, perhaps the most incomplete of all which I saw was that furnished for Sagaing, in which not a word is said of the most celebrated pagodas like the Aungmye-lawka, Tupayôn, and Shwemôktaw.

4. In view, then, of the defective nature of these preliminary lists, and the general inadequacy of the information afforded by them as compared with similar lists compiled in India, the question arises whether fresh lists, with the exception of those for Arakan, ought to be called for from district officers both in Upper and Lower Burma. This question should, I venture to think, be answered in the affirmative, as much time, trouble, and expense could thereby be saved. The area to be traversed is a very extensive one, and it is not expedient that the energies of the small staff of the Archæological Department should be wasted upon work, which can be satisfactorily and more economically performed by the local officials. Expert knowledge is not essential in the preparation of the preliminary lists. All notable pagodas, ordination halls, monasteries, zayats, caves, inscriptions, etc., possessing any historical, architectural, or archæological interest, are generally well known to the people of each locality, and village headmen and Tahsildars will have no difficulty in listing them and supplying the necessary information provided that careful instructions with tabulated forms are first issued as to the kind of information required. All, then, that the Deputy Commissioners would have to do is to forward direct to the Government Archæologist the lists as they are prepared by sub-divisional and township officers and village headmen, or in some cases, after being revised by them in the light of any information that may be at their disposal. The lists will be in Burmese, and they need not be translated into English or condensed into a literary form in the district offices, as this can be done by the Archæological Department. After their revision they might be passed on to the Public Works officers, upon whom would devolve the duty of noting on the dilapidations of the various monuments and suggesting measures for remedying them, besides adding any additional suggestions which might occur to them. A second revision in the Archæological Department would then be necessary before the lists were finally printed.

5. Even if the course suggested above is adopted, the amount of touring and inspection entailed upon the archæological staff in the work of revision will be very considerable and it is doubtful if it can be brought to completion in less than five or six years; while, if no further assistance is rendered by district officials or by the Public Works officers, it will probably take double that period, and, in consequence, the work of repair and conservation, which is placed

in the forefront of the duties of the Department, will suffer proportionately.

6. As regards the selection of monuments it is difficult, if not impossible, to lay down any comprehensive principles which can be applied to each and every case. First, there are the individual merits of the monument to be weighed; its historic importance; its architectural value, or any features which it may possess of peculiar interest for the religious or artistic history of the country. Then its comparative merits in relation to other monuments in its immediate vicinity must be taken into account; for in some localities where there is a dearth of first class monuments it might well be worth conserving a second rate building, which elsewhere would be allowed to fall to ruin. A variety of particular considerations of this kind defy the application of principles broad enough to embrace them all. There is one principle however, bearing on the conservation of wood or brick and stone buildings, which, I venture to think, might generally be observed. It is, that the selection of monuments to be maintained should be regulated according to the durability of their structures and the expense involved in their repair. In pursuance of this principle, the number of selected buildings of wood should be very limited as compared with those in a more permanent material.

7. If there is any doubt as to whether a monument deserves to be conserved or not, a personal inspection of it should invariably be made by the Archæological Superintendent. I have myself noted below on nearly all the important monuments which I visited in Burma, and I explained on the spot to the Archæological Superintendent the reasons which actuated me in each case to include them, or not, in the lists of antiquities. These reasons cannot be fully explained in the small compass of this note, but they were I think made sufficiently plain at the time to enable Mr. Taw Sein Ko to understand fully the lines on which the lists are being compiled in other parts of India.

Conservation.

8. In preparing the catalogue of ancient remains, the monuments should be arranged in classes according as they are Government property or not, and if they are not in possession of the Government, a statement should be added as to whether there are any endowments attached to them, or in what other way provision is being made or can be made for their upkeep. As the great bulk of the monuments in Burma, which it is desirable to maintain, are still in use for religious observances, and are not therefore liable to come under the direct control of Government except with the consent of the trustees or private owners concerned, it is necessary to consider whether in respect of some monuments that consent would not readily be given, and in respect of others whether indirect control might not be exercised through the agency of the constituted head of the Buddhist church.

9. The religious buildings to which I refer consist of *pagodas*, *viharas*, *ordination halls* and *zayats*. As regards pagodas a theory exists

among the Buddhists, just as it does among the Muhammadans in respect of their Masjids, that they are one and all public property, in which the original builders have no vested interest whatsoever, when once they have been dedicated to the public use. But in practice the descendants of the original builders are accustomed to enjoy the privilege of maintaining the pagoda in proper repair—a privilege which is of a purely religious character, and brings with it no material advantage. In many instances, however, no descendants exist, or, if they exist, they have by reason of their poverty renounced their privilege, and in such cases trustees may or may not have been appointed, according to the seeming importance of the monument, by the Buddhist community or by the local Government at the instance of the Buddhist community. I understand that the Local Government does not interfere unless they are asked to do so by the local elders, and that having appointed the trustees and drawn up the necessary regulations for their guidance, they divest themselves of further responsibility, leaving it to the Buddhist community to see that the duties of the trustees are properly discharged in accordance with the principles laid down in the regulations. So far as I have been able to ascertain all the sets of regulations which have hitherto been made are uniform in this particular, that they make no provision for controlling the conservation of the pagodas to which they relate, or for securing that the repairs are carried out on appropriate lines. To this defect in the regulations I wish to draw particular attention, for it seems to me that the absence of proper control is mainly responsible for the erection of the crowds of hideous modern structures which so effectually disfigure the beauty of the pagodas, around which they are clustered. Would it not be practicable to add to the regulations a clause to the effect that any questions relating to the repair or demolition of the pagodas themselves or the buildings connected with them, or to the erection of any new structures in their immediate vicinity are to be referred by the trustees to the Deputy Commissioner, and his approval obtained before the works are put in hand? The control over the administration of funds and the repair of pagodas, which was exercised by the state before the fall of King Thibaw, offers a sufficient precedent for adopting such a course. In those days there was a special officer, named the *Wut-mya-wun*, who was charged with the duty of looking after the repair of all important pagodas and monasteries, and seeing that their revenues were properly administered. This office might now be discharged by the Deputy Commissioner, who would, if the occasion arose, consult the officers of the Public Works and Archæological Departments in all questions of taste or technical knowledge.

10. As regards pagodas built by royalties the old custom which obtained among the Burmese, was that they should be repaired only by royalties, and hence the Buddhist communities are now disposed to repudiate the responsibility of maintaining them, unless the pagoda in question happens to be sufficiently famous to attract substantial revenues. In such cases I understand that wealthy Burmans might be found to

come forward at the invitation of the local Government, and undertake their conservation in a private capacity. Or, if private enterprise of this kind were lacking, the Government itself might assume the role of the former royal patrons, and take upon itself the absolute control of the monuments in question.

11. Another way of securing control over the conservation of these religious monuments is through the agency of the Buddhist Archbishop and Council. Such control would of course only be indirect and unofficial, but there is no doubt that most useful influences might be brought to bear in almost every direction through this channel. Already in some of the Trust schemes, *e.g.*, those for the Ananda and Shwezigon pagodas at Pagan, clauses are inserted requiring the sanction of the controlling Archbishop* to the erection of new pagodas, zayats and other buildings, and these clauses might now be worded so as to make it incumbent on the trustees to obtain similar sanction for all measures of conversation or repair, and clauses to the same effect might be included in all other Pagoda Trust schemes.

12. When I was at Mandalay, I had a prolonged interview with the recently appointed Archbishop, and found him ready to offer his wholehearted co-operation in preventing not only the misuse of religious buildings but any modernisation or unsuitable repairs. The Archbishop has realised that the vitality of Burmese Buddhism is reflected in the condition of their monuments, and that the neglect and decay into which the latter have fallen is emblematic to some extent of the declining vigour of the religion. He has realised moreover, the importance of preserving intact the venerable appearance which age has imparted to these monuments, and at the same time of removing any valueless and ugly ruins which might convey the impression that the monuments are not sufficiently well cared for. To accomplish this successfully, he is aware that skilled advice is necessary, and he would gladly avail himself of any which the Government might be able to offer him.

13. The co-operation and sympathy of the Archbishop would be especially serviceable in stimulating private enterprise to undertake the repair of ruined pagodas or chapels, or in bringing influence to bear upon the descendants of the original builders, and inducing them to accept the obligation, which is morally binding upon them, of maintaining the monuments of their ancestors. In the opinion of the Archbishop, the Buddhist scriptures support the view that it is as meritorious for a devotee to undertake the repair of the great monuments of antiquity as to build new ones in his own name, and he is prepared, I understand, with the help of his council to promulgate this doctrine generally throughout the country.

* In the English text of these regulations the word "Bishop" is used, but the Burmese translation signifies "Archbishop," and as a matter of fact, the Archbishop has been consulted by the trustees of the Shwezigon Pagoda regarding the restoration of a *nat* temple. In future the word Archbishop might be employed in both versions since the control exercised by the supreme head of the church is likely to be of a more uniform character.

14. Another question of Buddhist doctrine, for which the authority of the Archbishop and his council is needed, and for which it would be well to enlist his sympathy, is connected with the removal of the unsightly ruins of old chapels, only a few bricks of which perhaps remain, from the platforms on which the pagodas stand. In some localities, as at Sagaing, the local elders hesitate on the ground of religious scruples to remove such débris, while at other places, like Shwebo, no compunction whatever is shown. The Archbishop himself acquiesces in the view that their removal is quite justifiable so long as the images of Buddha or other sacred objects which they were built to enshrine, are transferred to chapels now maintained in good condition or to the shrines of the central pagoda.

15. I have stated the opinions of the Archbishop on the above points as they were translated to me through an interpreter, and I would suggest, therefore, that, now that they have been reduced to writing, they should, in accordance with his own express desire, be submitted to him with the request that he will give formal expression to his views both on these questions and on any others relating to the conservation of monuments, which may occur to him.

16. I may pass on now to the actual execution of the work of conservation and repair, and in this connection I may first note the general principles which should invariably be observed by officers entrusted with the execution of repairs. The chief aim of conservation should be to preserve and perpetuate authentic specimens of the monumental antiquities of the country rather than to re-build or renew them: and not so much to add new work in imitation of what the original is thought to have been, as to preserve what is left of it. It may be laid down, as a first principle, that, as funds will necessarily be limited, they should be economised in such a way as to preserve, as far as is practicable, as many of the most important ancient works as possible, and to this end preservation should usually be aimed at, and restoration attempted only in cases where its advisability is undoubted, and where special funds can be provided for the purpose. Of the buildings deserving restoration only a very limited number can be restored in the course of the year, and many will have to wait, it may be, five, or ten, or fifteen years before they can be taken thoroughly in hand, but each year the annual work of protecting and conserving them all must go on with unbroken regularity, so that when the time comes for restoring them, it may not be found that neglect in the meantime has necessitated a much greater outlay than would otherwise have been incurred.

17. Officers charged with the execution of the work, should never forget that the reparation of any remnant of ancient architecture, however humble, is a work to be entered upon with totally different feelings from a new work or from the repairs of a modern building. Although there are many ancient buildings whose state of disrepair suggest at first sight a renewal, it should never be forgotten that their historical value is gone when their authenticity is destroyed, and that our first duty is not to renew them but to preserve

them. When therefore restorations or repairs are carried out, no effort should be spared to save as many parts of the original as possible, since it is to the authenticity of the old parts that practically all the interest attaching to the new will owe itself.

A Pros, Mar. 1899, Nos. 3 and 4.
A Pros. May 1899, No. 2.

18. Save in the Palace and Fort at Mandalay comparative little conservation work has yet been done in Burma, but such of it as I inspected suggested that the following notes might prove useful for future guidance.

Supervision.

The whole success of conservation depends upon the degree of supervision given by the engineer in charge and the Archæological Superintendent, rather than upon the mechanical skill of the workmen employed. The workmen are usually good copyists capable of imitating any model which may be set before them, but unable to make use of their eyes or create anything original; and being accustomed to work with a stereotyped series of degenerate modern imitations, they apply them indiscriminately in place and out of it on all classes of buildings. It is essential therefore that no details should be left to their discretion As regards supervision on the part of the Archæological Surveyor it is not enough that he should pass the estimates only. That should be nearer the beginning than the end of his connection with conservation work. While it is in progress, his inspections should be as frequent as possible, and his help should be sought in every difficulty by the engineers in charge. At the present juncture, when a new stimulus is being given to conservation, it is far more important that he should visit the monuments under repair than that he should devote himself to any kind of elaborate survey work.

Different classes of buildings.

19. The principles applying to the conservation of wooden buildings must, owing to the nature of their material and the comparative short duration of their existence, necessarily differ from the principles applying to structures in brick or stone. Once a brick or stone structure is put into a good state of repair, we may expect that with a little attention from time to time, it may last for another five hundred years. With wooden buildings it is different; apart from the risk of fire which may sweep them away completely at any moment, their permanent maintenance will entail an ever recurring expenditure, and their renovation may have to be on an ever extending scale, according as the wood work gradually moulders to decay. This being so, the claims of stone and brick structures to preservation must always be put before those of wooden ones, and the measures taken to protect the latter should as a rule be on as economical lines as possible, since the results attained will be of a more fleeting nature.

20. Barrring the palace buildings at Mandalay, which possess a unique historical value of their own, the wood structures which it is desirable to maintain in Burma are valuable chiefly as specimens of the wood-carver's art, and our object should be to preserve them merely as such, so long as we can in *situ*; and, when that is no longer possible, to dismantle them and transfer the finest remnants of their carvings to the safety of a museum. Unless therefore a building is of exceptional merit, the restoration

of sculptured carvings, incrustate glass-work, gilt or other ornament, should never be resorted to. All that is wanted in the majority of these wooden buildings is to preserve as much of the original as we can, and I would, therefore, ordinarily limit our conservation work to the following measures.

(1). Plain structural repairs of such a kind as will ensure the stability of the building.

(2). Repair to the roof with a view to prevent the percolation of rain water.

(3). Earth-oiling of the wood work, as often as it may be necessary to prevent the ravages of ants.

(4). Other simple protective measures for preserving ornamental carvings or glass incrustate work, and preventing them falling away from the structure.

Vegetation.

21. The principal factor in causing the ruin of brick and stone buildings is the growth of vegetation in the joints, and the only way of dealing with this evil is constantly to eradicate the plants before they have the chance of becoming firmly rooted. For this purpose inspections of every building should be made by the engineer in charge at least twice in the year. Advice on this point is perhaps common place enough to appear superfluous, but my observations at Pagan and elsewhere led me to conclude that it might very profitably be repeated.

Stucco.

22. The great majority of the monuments, which were not of wood construction, were built of brick covered with plaster stucco, and in a great many instances this stucco has either peeled off completely, or adheres only here and there in artistic patches of deadened white and yellow, which serve to add a wonderful charm of colour to the rich background of deep red brick-work. The renewal of the plaster facing and the destruction of whatever remnants are left of the original stucco is a blunder which, I am sorry to say, has already been committed in not a few instances. The course to be invariably followed is to cut away, where it is necessary, just so much of the old stucco as has separated completely from the walls and edge round the remainder with cement so as to prevent rain water percolating behind. On no account ought the beauty of the exposed brick-work to be spoilt by covering it with new and glaring plaster or whitewash. Where only comparatively small gaps occur in *ornamental* stucco-work, and its repair is consequently desirable, care should be taken to avoid the insertion of modern designs. Whenever broken parts have to be replaced, as for instance in balustrades, mouldings and the like, the existing old designs which generally consist of one pattern repeated, or of two alternating with each other, should be faithfully copied.

Brick-work.

23. In repairing brick-work, bricks of the same size as the original should be used; they can usually be obtained without difficulty, and at a minimum cost, from dismantled buildings on most of the sites in Burma. The mortar joints also should be of the same thickness as

in the old work ; and if the adjoining surface of the brick-work, which is not to be repaired, is much decayed, the mortar joints of the new work may be recessed about $\frac{1}{4}''$ to $\frac{1}{2}''$, so as to avoid the appearnce of great newness. On no account either in brick or stone work should pointing be permitted, except in places where it is not exposed to view. Pointing on ancient buildings is an anachronism, which cannot be too carefully guarded against. On sites like Pagan, where there are vast quantities of old bricks close at hand for the workmen to use ; were much of the brick-work is without mortar; and where the cost of restoration means little more than the cost of the labour employed ; we should not hesitate to rebuild any prominent features, such as battlements, the absence of which seriously detracts from the beauty of the structure, and whose restoration we may be sure will more than repay the expense incurred.

Replacement of missing architectural details.

24. Should it be necessary at any time to replace any architectural detail which has disappeared, examination should be made of any similar feature in another part of the building itself or on one of similar style in the neighbourhood. In restorations of this kind the assistance of the Archæological Department should usually be invoked.

Roofs and walls.

25. Accumulations of soil on roofs or other flat surface should be removed, as favouring the growth of vegetation. Drainage openings on terraced roofs should be stopped to prevent the percolation of rain water. Cracks on the roof where they are not observable, may be pointed, but on the walls both exterior and interior simple grouting should be employed.

Removal of masonry etc.

26. It is not generally desirable to demolish or remove, in whole or part, any stone or brick-work which it is at all possible to repair in *situ*. If new work has to be inserted, any mouldings or other details which may have to be worked on it, should be in strict harmony with the adjoining ornaments. In removing broken or decayed work do not take out any but such as is so far gone as to have lost all its original form ; better have broken or half-decayed original work than the smartest and most perfect new work.

Broken lintels etc.

27. As a rule broken lintels or beams may be supported by skilfully stirruping them up from above, or, if that is impracticable, by inserting corner irons beneath ; but in cases where a pier, not forming part of the original design has to be introduced, it should be made quite apparent that it is a later addition without however rendering it obtrusive by pointing or by other purely modern devices.

Effacement of traces of old designs.

28. When any feature of a building is too far decayed to be restored, the spot which it occupied must not be plastered over so as to destroy all traces of it ever having been there. This should apply to all classes of architectural detail, and even though a small fragment only remains, it ought not to be obliterated.

Whitewash.

29. The use of whitewash or paint, especially on sculptures and inscriptions, should be forbidden. If it is contemplated to remove any from an old surface, care should be taken that any inscription, relief, or painting beneath, is not

injured. Whitewash may often be removed by careful brushing with native soap and water, but if it will not yield to this treatment, a weak solution of nitric acid, or in cases where the action of nitric acid may be deleterious, of acetic acid, may be used.

Epigraphy.

30. Before proceeding to indicate the extent of the epigraphical work which lies before the Survey in Burma, I wish briefly to summarise the progress already made. Previous to his death in 1890, Dr Forchhammer had made a collection of estampages of 180 inscriptions from the ancient capitals of Pagan, Pinya, and Ava. All these, with the exception of a few in the Talaing character, were deciphered and published by Mr. Taw Sein Ko in 1891, in a volume of 430 pages, which was afterwards translated into English by the Government Translator. None of these inscriptions have yet been critically studied, but there is no doubt that, when time can be found for that purpose, they will afford invaluable assistance in tracing the development of the Burmese alphabet as well as of Buddhism in Burma. Their historical value, however, has already, been established; they elucidate, fully, the period of Burmese history beginning with the Alompra dynasty in 1753 A. D., and, partially, the period extending from the 11th to the 16th centuries.

31. Besides these inscriptions collected by Dr. Forchhammer, the Archæological Survey has published in Burmese four quarto volumes of other records, containing 1,770 pages in all. Two of these volumes consist of the inscriptions collected in 1785 at the Arakan pagoda, Mandalay, by King Bodawpaya who reigned at Amarapura from 1781 to 1819, and comprise 573 records in all. The other two volumes are a collection of 215 inscriptions made by Burmese writers of the Archæological Department in the districts of Yaméthin, Meiktila, Kyaukse, Mandalay, Shwebo, Sagaing, Pakokku and Myingyan. All the material contained in these four volumes has yet to be translated into English and annotated. So far indeed there are only two inscriptions from Burma, which have been critically studied, translated and annotated, namely, (*a*) the Po-u-daung inscription of Prome, and (*b*) the Kalyani inscription of Pegu. The former illustrates one of the transition stages reached by the Burmese alphabet in the course of its development, and indicates the extent of the Burmese empire under Sinbyuyin (1763-1775), a son of Alompra. The latter is, historically, the most important record yet discovered in Burma. It gives, with positive dates, a resumé of the vicissitudes which Buddhism underwent both in Ceylon and Burma, from the Third Buddhist Council held under Asoka to the 15th century A. D., and the authenticity of the statements contained in it has been verified by independent researches in Ceylon.

32. Out of 37 districts, into which Burma Proper is divided, only 8 have been partially

explored, and 968 inscriptions have been discovered. There is every reason to expect that the exploration of the remaining 29 will yield results equally numerous and equally important for the student of Burmese history. I may remark here that both Burmese history and Burmese epigraphy are still almost a *terra incognita* to European scholars, and that we must look to the Government Archæologist to do for Burma what Dr. Hultzsch has been doing for Madras, *viz.*, not only to collect, transcribe and clsssify the inscriptions discovered, but to co-ordinate them, and to build up with the material they furnish new chapters in the history of the country. Phayre's "History of Burma", which was published in 1884, is an excellent pioneer work, but it requires to be amplified and corrected by more recent researches. A work, too, setting forth the principles of Burmese epigraphy somewhat on the lines of Burnell's "South-Indian Palæography" is still a desideratum.

33. Apart from the elucidation of indigenous history, especially of the period antedating the rise of Anawrata, the hero-King of Pagan, who transplanted the southern form of Buddhism to the upper valley of the Irrawaddy there are many problems common both to India and Burma, which claim attention from the Government Archæologist. Thus, the five centuries subsequent to the death of Asoka, when it may be inferred that the Northern form of Buddhism was developed, still constitute a serious gap in Indian history. Traces of Northern Buddhism are extant in the language, beliefs, and inscriptions of Burma, and a hope may be expressed that further researches and excavations at Prome, Tagaung, and in the Kubo valley, on the borders of Manipur, will throw some useful light on the subject. Many more problems might be mentioned, which epigraphical researches in Burma may materially assist in solving and which the Government Archæologist should always keep in view. The field is, indeed, an extensive one, and it would be gratifying if the prospect of creating a school of students for Burmese research were less remote than it is. In this connection I may refer to the suggestion of the Government of India that an archæological scholarship should be founded by the Local Government on the lines of those already founded in India. I would suggest that if the Local Government can see their way to giving effect to this proposal, the scholar, whoever he may be, should devote himself particularly to Burmese epigraphy, in the study of which some considerable advance has already been made by the Government Archæologist, and which will be in danger of relapsing again, unless some one is found to perpetuate the results of his experience and scholarship.

A Pros., Nov. 1903, Nos. 3 to 5.

Provincial Staff, etc.

34. Having now indicated the extent of the task immediately awaiting the Provincial Survey in Burma, I may pass on to consider the efficiency of the staff appointed to carry

it out. The present establishment consists of:—

	Rs.		
The Government Archæologist.			
1 Architectural Surveyor.	... 150	per mensem.	A Pros., Apl. 1903, Nos. 1 and 2.
1 Head Burmese writer	... 80	,,	
1 Second ,, ,, ...	... 70	,,	A Pros, Nov. 1899, Nos. 1 to 3.
1 Third ,, ,, ...	... 50	,,	A Pros, Sept. 1902, Nos. 1 and 2.
2 Chaprasis, on Rs. 12 each	... 24	,,	
1 Durwan	... 12	,,	A Pros., Apl. 1903, Nos. 1 and 2.
1 Sweeper	... 6	,,	
Total	... 392		

A proposal has lately been made that Mr. Taw Sein Ko should be allowed to hold the dual office of Government Archæologist and Examiner in Chinese, on the supposition that his duties as Archæologist allow him time to spare for other occupations. This question has been taken up separately and it is unnecessary to discuss it again here, but it may be hoped that, if any doubts still exist as to the advisability of maintaining a whole-time officer as Government Archæologist and of retaining Mr. Taw Sein Ko in that position, they will be dispelled by what I have said in the foregoing paragraphs. Mr. Taw Sein Ko is the only available scholar with the requisite knowledge of Pali, Burmese and English; he has had moreover a sound and critical training in Epigraphy, and has, too, an intimate acquaintance with Chinese—a most useful asset, if not an essential qualification, for an archæologist engaged in disentangling the problems of Burmese civilisation. His knowledge of architecture and surveying is not, it is true, very extended, but there is not that same need in Burma for a skilled architectural surveyor, which exists in the other archæological circles of India. All Burmese monuments belong to a few well defined classes, each of which is characterised by an almost monotonous uniformity of style, and when once the general principles to be observed in their conservation have been settled, there will be comparatively little need for highly technical knowledge, or room for much personal and artistic discretion, in the application of the general principles to the particular; while as regards survey work involving a special knowledge of draftsmanship, that can be regulated to a great extent from my own office. *F. 49 of 1904, S. I.*

35. All the assistance which Mr. Taw Sein Ko requires is that of a good native architect on Rs. 150 a month—a man who understands thoroughly how to make plans, elevations, sections etc., whose drawing is neat and well up to the standard maintained in the other provincial Departments, and who is withal a good photographer. On the pay suggested we ought without much difficulty to be able to find an assistant with the necessary qualifications. The present architectural surveyor is Babu S. N. Roy, a Bengali, who is an employé of the Public Works Department; his photographs are good enough, but his drawings are rough and scarcely satisfy the requirements

of the Archæogical Survey. Possibly they might improve with experience, but this is doubtful as there is no one in Burma from whom he could receive the necessary tuition. Besides, his knowledge of English is very slight and he is unable to give a fair and accurate description of any building On the whole, therefore, I should be inclined to look for a better qualified assistant to take his place. Further I would appoint a second draftsman on Rs. 50 per month in place of one of the three Burmese writers, who are devoting themselves solely to epigraphy ; for, notwithstanding the great importance of epigraphical work, I feel that a disproportionate amount of attention has hitherto been given to it, and an effort ought now to be made to make up for the conspicuous neglect of conservation and architectural survey-work in past years. To this staff I would add also an English-speaking clerk, to remain at headquarters and carry on the English correspondence and other office work during the absence of the Government Archæologist in the touring seasons. Mr. Taw Sein Ko tells me that it is often most difficult for him to leave headquarters, as there is no one with a knowledge of English to leave behind, and the economy exercised in this particular appears to me misplaced. It might be suggested that an English-speaking clerk should take the place of another of the Burmese writers, but to reduce the latter to less than two would seriously impair the excellent work which they are doing ; and seeing that these writers have received a special training in the archæological office I would strongly disadvise, unless it is absolutely necessary, throwing away the labour which has been spent upon them.

The subordinate establishment, then, which I would recommend consists of:—

	Per mensem.
	Rs.
1 Architectural assistant	150
1 Head Burmese writer	80
1 Second Burmese writer	70
1 Draftsman	50
1 English-speaking clerk	50
2 Chaprasis, Rs. 12 each	24
1 Durwan	12
1 Sweeper	6
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The cost of the subordinate establishment will thus be raised by Rs. 50, but it must be remembered that very special conditions apply to Burma, and that although the amount of epigraphical work to be done is hardly less formidable than in the Southern Presidency of India, no corresponding appointment of Government Epigraphist exists, and whatever is done in this particular field has to be done by the Government Archæologist in addition to his other duties.

36. Here I may remark on the office accommodation at Rangoon. The building in which the office is placed is a squalid and tumble-down bungalow, with the floor breaking up and the

ceiling coming down ; abounding in dirt and vermin ; poorly furnished, and wretchedly lighted. In fact it appeared to me to be scarcely habitable, and personally I found it impossible to make any use of it during my stay in Rangoon. It is said that other accommodation is to be provided in the Provincial Museum, whenever that may be built ; but as the Museum has already been talked of for many years, I would suggest that steps should be taken at once to transfer the office to a more sanitary building. Perhaps the best course would be to locate it, for the present at any rate, at Mandalay, which occupies a more central and convenient position than Rangoon in respect of archæological work generally, and where much conservation work is now in progress. A neat and clean bungalow containing about 4 rooms could be rented, I understand, in Mandalay at a much lower cost than in Rangoon. There is one other point to which I should like to call attention before dismissing the subject of office establishment and equipment ; it concerns a reference library. At present the office possesses scarcely a reference book or archæological work of any sort, and it is inconceivable how work can go on without them. I was told that the Archæologist is expected to borrow the books he wants from the Secretariat or Bernard Free libraries, but I think I should be right in saying that the majority of the archæological books which he needs to consult are in neither of these institutions, and so far as the volumes needed for daily reference are concerned the arrangement is inconvenient, and certainly not conducive to efficiency. Whether the Local Government decide to transfer the headquarters to Mandalay or not, I would recommend that a small sum, say Rs. 300, should be allowed annually for the next four or five years, wherewith to purchase the most necessary archæological publications.

Mandalay.

37. The whole question of the conservation of the *Mandalay Palace* was dealt with in a Minute by Lord Curzon dated the 2nd December 1901, and I need do little more than note which of the instructions issued to Mr. Benton have not yet been carried out.

▲ Pros., Jan. 1902, Nos 1 and 2.

▲ Pros., Jan. 1903, Nos 1 to 8.

1. The garrison church has not yet quitted the Audience Hall, although it was expected that it would be removed *in the early part of 1903 at the latest.*

2. No steps appear to have been taken for the removal of the Club, which was expected to leave at the same time.

3. The whitewash has not yet been removed from all the rooms referred to in paragraph 5 of the Minute, notably from the *Zetawun Saung*, which is well lighted, and not, apparently, one of the interior rooms mentioned by Lord Curzon. It may be noted that the red paint used in the new restorations is of a dull chocolate colour, which shows up in bad contrast to the glowing crimson or red of the original lacquer. I understand from Mr. Cuffe that the Burmese lacquer costs about Rs. 8 per 100 square feet, and on the score of expense, therefore, there is no great reason why it should not be renewed.

38. With the above exceptions effect appears to have been given to all of Lord Curzon's instructions, and only a few additional remarks seem called for. In some of the Palace rooms, certain panels with glass incrustations have been replaced by sheets of zinc, from which the design has been roughly perforated out, and their patchy effect can better be imagined than described. If it is found impracticable, as I fear it is, to restore the original incrustate work, it should be replaced by panels of plain teak, which will at least have the advantage of not attracting the eye by their ugliness.

39. One of the Palace buildings was selected (by whom I know not) as a hall in which to exhibit a wooden model of the Palace, which is now in course of construction, and steps, screens, partitions and other furniture, were removed to make room for this model. But no sooner had this been done, than it was decided that the building was unsuitable for its purpose, and it was accordingly abandoned in favour of the *Salin Supaya Asaung*. No steps however were taken to replace the furniture, which is now lying about in a neglected state outside. This should be attended to at once.

The suitability of the *Salin Supaya Asaung* would appear to be as doubtful as that of the other buildings, since I am told that it is intended to cut away a number of the supporting pillars in order to provide space for the model. I sincerely hope this intention will never be carried out A model of the Palace may be interesting, but it cannot be interesting enough to warrant any one in destroying for its sake the beauty of any of the original buildings; and personally I doubt if it is even worth the expense of making.

40. The building selected as a Museum is the one which was occupied until recently as Circuit Rooms. I went carefully over this with the Executive Engineer, and an estimate has been framed by him for repairing the floor, renewing some of the doors, and in other respects converting it to the purpose of a Museum. The Government Archæologist has proposed to exhibit here a series of figures showing the Burmese King and Queen with all their Court and retinue in their official dresses or uniforms, and the various insignia that distinguished each. I would add another suggestion, *viz.*, that he should collect here all the native manuscripts he possesses or can afterwards acquire, which contain plans of the ancient capitals of Burma, including that of Mandalay and the existing buildings in the Palace, and illustrations of the Burmese costumes in the days of the kings, of the royal flotilla, and of any other objects of interest connected with court life.

Photo. 1. 41. The *pyathat* over the North Main Gate of *Fort Dufferin* has just been restored, and the work is eminently satisfactory in every respect. The restoration of the seven other *pyathats* is nearing completion, the cost involved being Rs. 43,000 in addition to Rs. 23,000 expended upon repairs. The whole of this undertaking seems to have been admirably carried through.

Photo. 2. 42. Of the *Thudama* and *Patan Zayats* the Deputy Commissioner, Mandalay, remarks:—
"The Thudama and Patan Zayats are fearfully

dilapidated. Hardly worth repairs or expense." His remarks are not borne out by a close examination of the buildings. The ceilings are almost intact, and the fine, high pillars are in a good state of preservation, though the roofs and some of the carvings stand in need of repair. Both buildings are good specimens of Burmese architecture, and certainly ought not to be neglected in the general scheme of conservation. Arrangements will have to be made for the sepoys who are now in possession, to evacuate them.

43. The *Pitakat Taik*, or Library, is a masonry building with teak joists. Its repair would cost some Rs. 7,000 and the result gained would not, in my opinion, justify so large an outlay. What is wanted is rough conservation and not restoration, and it will be sufficient if the cost of its initial repairs is limited to, say, Rs. 300 and if Rs. 50 or less is spent annually on clearing the jungle. The crumbling roof should be cut away, the sound portion being carefully preserved, and provision made for draining off the rain water. The crevices in the walls, where wooden joists rested before, should also be filled up and plastered. Photo 3.

44. The *Sandamani Pagoda*, the tomb of the Heir Apparent of Mindon and three other Princes, who were murdered in the Myingun rebellion of 1868, possesses no architectural interest, and, from an archæological point of view, does not deserve to be conserved. It is, however, for the civil authorities to decide whether there are political reasons why it should be maintained. Photo. 4

45. The magnificent *Atumashi Kyaung*, or Incomparable Monastery, is now a mass of charred remains. It was erected by Mindon in 1857, and burnt down in 1892. It might be worth while to preserve in *situ* the gates of the compound, re-erecting those which are lying on the ground, and doing whatever is necessary to preserve the wood-work.

46. The one building in Mandalay, which is comparable to the Queen's Monastery and even surpasses it in some respects, is the *Shwe Nandaw Kyaung*, near the Atumashi. It was built, in 1880, by Queen Sinbyumashin, with materials obtained by dismantling the room in the Palace, where Mindon died in 1878, and the carvings and pillars in the chapel are exquisite. It is occupied by Buddhist monks, and is fairly well kept up by them, but the conservation work ought to be more systematic, and some arrangements for making it so might be come to with the monks or local elders. The timely patching up of the flooring or roof, and the annual earth-oiling of the wood etc. would materially lengthen the life of the building.

47. The *Kuthodaw Pagoda* contains 729 stone tablets on which the entire Buddhist Canon is inscribed. The building is looked after by local trustees, and is in a generally good state of preservation. Photo. 5.

48. Close to the Thudama Zayat is the *Thudama Kyaung*, occupied by Buddhist monks, which deserves to be preserved if only for the sake of its fine carving. A small sum might be profitably laid out in earth-oiling the wood-work, strengthening structural supports, setting up pinnacles, restoring a few of the missing carv-

ings, whose absence is most conspicuous, and replacing others by plain teak boards.

40. In the north Moat Road, there are several zayats constructed of wood, with ornamental carvings on their eaves and gables. All are more or less in a state of dilapidation, but an attempt might be made to conserve a representative selection of them. They are said to have been built by Burmese Ministers in Mindon's time, and to have been intended for religious functions, but their ownership should be enquired into before conservation works are begun. Some of the zayats will have to be dismantled, and the materials obtained from them might be used in repairing those selected for conservation. Although these buildings are not shown either on the Civil or Military Register, they are occupied by camp followers of the Regiments stationed at Mandalay, for whom other accommodation will have to be found, when these buildings are vacated.

Photo. 6.

50. The Public Works Deparment is spending about Rs. 3,000 in making the roof of the *Queen's Monastery* in A Road water-tight, in strengthening the weak portions of the floor, and in replacing 38 carved figures, which are missing. The work is being carried out at the instance of Lord Curzon, and appears to be in every way satisfactory.

A Pros., Jan. 1902, Nos. 1 and 2.

Photo. 7.

51. In the court-yard of the *Arakan Pagoda* are some strange bronze figures which struck me as some of the most valuable antiquities which I saw in Burma Two of them are figures of men, of colossal size, and four are of elephants; all are said to have been removed from Arakan about a hundred years ago. Judging from their technique I think it probable that they are perhaps the oldest known figures in Burma, and I would strongly advise that every effort should be made to secure them for the provincial Museum, for which they would be a really splendid acquisition. If they can be acquired, the greatest care will be necessary in the cleaning of them, and only an expert should be allowed to undertake the work.

Within the same enclosure, there is a large collection of inscriptions from various parts of the country which have been deciphered and published in two volumes in Burmese; but as these are inaccessible to English readers, I have suggested to the Government Archæologist that a short resumé of their contents might be prepared and published either in one of the Archæological Reports, or in pamphlet form.

Pegu.

Photo. 8.

52. Very considerable interest attaches to the famous *Kalyani* Inscriptions. They were set up by King Dhammaceti after he had founded the Kalyânisimâ, a Hall of Buddhist Ordination, in 1476 A. D. and originally consisted of 10 slabs. The language of the inscriptions is partly Pali and partly Talaing. The Pali portion was edited, translated, and published by Mr. Taw Sein Ko in the *Indian Antiquary* in 1893, but the Talaing portion, which is a translation of the Pali text, still remains undeciphered. All of the stones are broken, some badly, and the fragments have been collected in heaps and a shed

built over them by the Public Works Department. The shed is not beautiful, and, the ground around being covered with jungle, is difficult of access. I suggested to the Government Archæologist that the fragments of the inscriptions might be pieced together by making a careful comparison of estampages taken from them; the stones themselves being too heavy for manipulation. A level pathway should be made from the main road to the Inscription shed; and the jungle should be cleared from its immediate vicinity, as well as from the foundations of the other ruined buildings around, which are now entirely concealed by the overgrowth.

53. The *Shwethayaung* is a colossal recumbent image of Gautama Buddha measuring 181 feet in length and 46 in height. It is referred to in the *Kalyani* Inscriptions as the "Mahâbuddharûpa" and is said to have been built by Migadhipa, King of Pegu, in 994 A. D. Recently the local elders have restored it, and have now arranged to put up an iron roof over it; for which purpose they have been purchasing materials at a great expense from Calcutta and have engaged an architect to superintend the work. Great pits have already been dug for the foundations of iron pillars, and to judge from present appearances, the building is intended to be as much as possible like a railway shed. Under instructions from the Local Government, the Executive Engineer, Pegu, gives occasional advice to the elders, and deputes, from time to time, a subordinate to help in the supervision of the work. The whole undertaking appears to me to be a sheer waste of money, and an iron shed particularly incongruous as a protection for an ancient Buddhist image. However, it is probably too late now to dissuade the elders from carrying out their intention, and all we can do is to try and induce them to preserve all the remains, statues, etc. unearthed in digging out the pits, and to make a more suitable approach to the image, and generally repair the platform on which it reposes. Photo. 9.

54. A little money might profitably be spent in conserving the *Shwedaung Thein* or Hall of Buddhist Ordination, near the railway station. It is a square building built of brick and stucco of the ordinary type. Each wall is pierced with a door, and the entrances are guarded by two pairs of griffons, the inner pair being rampant. There is no roof to the hall and the outer face of the northern wall has no plaster on it, but the building seems never to have been completed in the first instance. All that is necessary for its conservation is the clearance of débris from the plinth, a few slight repairs to the griffons, and the approaching steps, and the strengthening of the falling stucco by edging it with cement. The tops of the walls should also be protected against the rain. Photo. 10.

I have previously referred in paragraph to the incongruous style of some of the modern structures which disfigure the platforms of many of the ancient pagodas in Burma. The Shwehmawdaw Pagoda at Pegu is a case in point; some of the *Zayats* and *Tazaungs* are of a most debased Renaissance style, hideously out of place in juxtaposition with the oriental building beside them. Surely this is a case in which the Deputy Commissioner, or,

failing him, the Buddhist Archbishop, might interfere to prevent the erection of such monstrosities, especially when it is realised that beautiful little chapels in the native style could be put up at a smaller cost.

Amarapura.

Photos. 11 & 12.

55. The *Sangyaung* consists of two buildings built about 85 years ago by Mindon's Chief Queen and her mother; they are older than the monasteries at Mandalay, and the style of their wood-carving is bolder. Glass panels, illustrating scenes in the *Jataka* stories, are let into the doors. The building erected by Mindon's mother-in-law should be repaired structurally and earth-oiled, but no attempt should be made to restore the carvings. In one corner, are lying three pieces of carving covered with glass mosaic, which cannot now be replaced in their original positions owing to the rotten state of the wood-work. A collection of such carvings should be made and preserved in the Mandaly Palace Museum, or if not needed there, should be distributed to the Museums in India.

The building put up by the Chief Queen should, without question, be conserved, the same measures being taken as in the case of the preceding building. The whitewash also on one of the interior rooms should be removed. It may be noted that there are some good examples here of ancient lamp-posts with dragon designs, which could well be adopted if substitutes are required for some of the hideous modern lamps around the Mandalay Palace or elsewhere.

The question arises as to whether the Buddhists could not be asked to contribute to the conservation of these buildings. The Burmese Archbishop informed me that a portion of the funds of the Kaunghmudaw Pagoda in the Sagaing district, which has endowments, was applied to the maintenance of the Sangyaung buildings. The matter might be enquired into.

56. Hard by, are two other monasteries, one called the *Ngwegyaung* or Silver Monastery, and the other the Kyaung of the Danubyu Queen, wife of Shwebomin. The pillars of the latter are about 75 feet high, but it has no roof, and the dilapidations of both buildings are too great to admit of conservation. The carvings of the doorways, however, and on the roofs and in the gables are still good; and a fine collection of them could be made, which would be much valued in the Indian Museums, if not in Burma.

57. It was told that an image of Rishi Kapila, the founder of Kapilavastu, was kept in the *Shwekunok Pagoda*, having been presented to King Bodawpaya, about a hundred years ago, by a Brahman from India, but at the time of our visit it had disappeared and we were informed that it had probably been removed to the Arakan Pagoda by the trustees. An inquiry might be made about it, as it is important to know where the image is now located, and whether the trustees had the right to remove it without first obtaining the permission of the Local Government.

On the site of *Shwebomin's tomb*, which was originally a masonry structure, the Public Works Department has erected a small wooden shed with a corrugated iron roof. I agree with the Government Archæologist that a brick building should be substituted for the present one, which is wholly wanting in artistic merit. Photo. 13.

58. The remains of the Palace built by Bodawpaya consist of two masonry buildings, one of which is called the Pangon, and the other the Shwedaik or Treasury. The former was originally a two-storeyed building; but it has now neither roof nor flooring. The latter is on a high plinth, and is in a fair state of preservation. Both buildings deserve to be roughly conserved. The jungle, to a distance of at least 20 feet around the buildings, should be cleared; the tops of the walls should be made water-tight with rough plaster, which should not be obtrusive to the eye; and petty structural repairs should be done; but nothing on an extended scale need be attempted. The exposed brick-facing need not be protected by a coating of plaster, but the broken edges of the plaster should be finished off with cement to arrest its further decay. Our object is to retain the old plaster, which still remains, and not to attempt any unnecessary restoration. None of the ornamentation in plaster or brick-work should be restored. The crevices in the walls where wooden joists used to rest, should be filled up and plastered; and steps should be taken for draining off rain water which accumulates in the interior of the buildings during the rainy season. The whole of the repairs should be done on the cheapest lines provided that the work is substantial.

Sagaing.

59. The *Aungmyelawka Pagoda* is one of the few structures in Burma built entirely of stone. It was erected by Bodawpaya after the model of the Shwezigon Pagoda at Pagan on the site of the residence allotted to him before he came to the throne. It has five pairs of leogryphs, and was considered by successive Burmese Kings to be a good model after which other pagodas should be built. As it possesses endowments and is being well looked after by the trustees, no State interference appears to be necessary.

60. The *Tupayōn* (Stūpārāma) is a pagoda of very rare type in Burma and of peculiar architectural interest as marking a certain phase in the development of these structures, and for this reason is certainly worthy of conservation. The platform is now overgrown with jungle; some of the stone railings have been broken; and broken heads of the images of Buddha are to be seen near the pagoda. A chapel in a corner of the court-yard filled with images of Buddha, is in a dilapidated condition, and two valuable inscriptions of the 16th century A. D. are totally unprovided with shelter. The jungle should be cut down, and the court-yard, the base of the pagoda, and the steps leading to it, should be cleared of all débris. Crumbling masses of masonry should be underpinned with brick and plaster, and here and there, loose brick-work

might be strengthened with a judicious application of mortar; the cracks in the brick-work should be filled up so as to prevent the entry of rain water, the chapel in the corner should be repaired, and the inscriptions should be preserved in *situ*, and a masonry shelter, capable of admitting enough light, should be built over them.

61. The *Shwemoktaw Pagoda* according to tradition was originally built by Asoka in the 3rd century B. C., since when it is said to have had many outer shells added to it. Recently it has been repaired by the Hlethin Atwin-wun, an ex-minister of the late Burmese Government, who has had an elaborate inscription cut to record his meritorious deed. There are many small chapels on the platform in all stages of decay and the débris of all of them ought certainly to be cleared away, the images and other sacred objects of worship being transferred to other chapels which are in a good state of repair or to the shrines of the central pagoda. The Burmese Archbishop, whom I have since consulted on the subject, acquiesced in this view, and it would be well if he could be persuaded to give public expression to his opinion about the removal of such débris not only in respect of this particular pagoda, but of all other religious buildings throughout the country.

Shwebo.

62. The *Myodaung Pagoda*, built by Alompra in 1757 A. D., is famous for the relics enshrined within it, which are estimated at the value of a crore of rupees. It was recently renovated by the people, and surmounted by a *ti* at the expense of a sub-divisional officer, Maung Pe. The walls of the pagoda are in ruins, and the trustees say that to repair them would cost about Rs. 4,500. The money ought to be forthcoming from private subscriptions, but whether it is or not, there is no reason for the Government to give any financial assistance, as there is no historical or architectural interest attaching to the building. It is noticeable that at this pagoda the trustees have cleared the platform of all the débris of ruined chapels.

63. The *relics*, which were unearthed in December 1903, in the *Shwebawgyun Pagoda*, are now in the *Shwetaza Pagoda*. It is proposed to build a Museum within the precincts of the pagoda for their exhibition, and the object, being in the public interest, is one to which the Government might well grant a small subsidy. A spot to the west of the southern entrance was pointed out as the site of the proposed Museum, and it appears to be generally suitable for the purpose. Three small pagodas will have to be pulled down to make room for the building and the ground around levelled. The design of the Museum which had not been settled upon, should be in keeping with its surroundings and enough room should be provided in it for exhibiting any other antiquities of interest from the neighbourhood, among which I may mention four stone inscriptions which stand in need of a shelter. To ensure the safety of the relics, which are valuable enough to tempt thieves, double doors might be provided, *i.e*, teak doors opening outwards, and iron gratings behind

them opening inwards. The windows should also be provided with bars. Among the relics are many duplicates of great interest and a few specimens of these might be secured for the Rangoon and Calcutta Museums.

Pagan.

64. The *Ananda Pagoda* possesses two features which make it perhaps the most interesting building in Burma. The first of these is a long series of stone sculptures set up in the interior aisles, which are said to be contemporary with the building, and which represent various scenes in the life of Buddha. The other is the ornamental tile-work, consisting of some 1,500 separate plaques disposed in bands around the exterior walls of the four terraces. The enamel of these tiles is of dark green colour, and appears to be nearer akin to the Chinese than to any Persian or Indian fabrics. On each plaque is some scene connected with Buddhist ceremonial or representing one of the *Jataka* stories, and this fact renders them of peculiar value to archæology. I have suggested to the Government Archæologist that photographs (or, if in some cases that is impracticable, drawings) should be made of each; the legends beneath being carefully copied and translated, and an attempt made to identify the *Jataka* stories, which they illustrate. Such a contribution to Buddhist iconography would be highly appreciated by oriental scholars in Europe. Photo 14.

It is much to be regretted that the trustees have had many of the tiles whitewashed or covered with a double coating of black and green wood-oil. This attempt to restore them to their original colour has resulted in their being hopelessly disfigured, and I do not know if it will ever be possible to clean off again the thick coating of oil. I have asked however that a specimen may be sent to me for experimenting on, and will communicate the result later. I would strongly recommend that the trustees should be asked by the Local Government to spare their labours in future, as these tiles from Pagan are, as far as we know, absolutely unique of their kind.

65. The *Nanpaya Pagoda* is among the oldest and, architecturally, most attractive buildings of Pagan; it is said to have been erected in the 11th century by Manuha, the last of the Talaing kings. I examined this pagoda very thoroughly and concluded that no restoration ought to be attempted, but that such conservation measures should be carried out as would prevent its further decay. In the interior of the building the ground floor, which has silted up, should be lowered to its original level; and the bats should be expelled by hanging thorn bushes at the entrance. A water-tight roof should be put on, and the sky-light windows should be repaired so as to admit sufficient light into the building. The jambs on the eastern chamber should be bricked up, and a stone slab should be put over the doorway in place of the wooden beam, which is rotten. The new brickwork should not be plastered over, and red mortar should be used in it, which can be prepared by mixing pounded brick with ordinary mortar. No gaps in the existing stucco of the Photos. 15, 16 & 17.

walls should be filled up, but the broken edges should be finished off with strong cement, as nearly as possible of the same colour as the original stucco. The arches over the two windows, by which the building is lighted, should be repaired, as also the arch at the eastern end; and in each case the foregoing instructions as to the treatment of the mortar and face stucco should be observed All pointing should be avoided: the joints should be as inconspicuous as possible; and care should be taken to prevent the mortar smearing the adjacent surfaces. In repairing the brick-work above the eastern arch, it should be carried forward to the front of the archway, but instead of being finished off flush, the brick should be laid irregularly so as to avoid giving the appearance of new work. The corners of the building on the outside have been badly damaged by cattle and should be repaired in stone, where stone appears now, and in brick-work where the bricks are exposed to view. The repairs to the windows and archways above, on the exterior of the temple, may be carried out in stone, the loose projecting bricks, where necessary, being removed; but both here and elsewhere only large gaps in the masonry should be made good, all the small dilapidations being left as they are. The projecting cornice around the building should also be repaired in stone so as to protect the face of the walls, and all cracks should be grouted. The battlements on the roof and the cornice need not be repaired, but the small pagodas at the corners, as well as the roof and the sikra, should be made water-tight I should add that in conserving the exterior of the building no decorative carving should be attempted. There is one ornamental feature of this building which deserves particular notice, *viz*, the floral designs accompanying the figures of Brahma sculptured in relief on the stone pillars of the interior. Their interest lies in the fact that we appear to have here the prototypes from which the somewhat more conventional patterns in the Mughal architecture of India were copied, and if I am correct in this surmise, it disposes of the theory that the latter owed their origin to Italian inspiration.

Photos. 18 & 19. 66. The *Nagayon* (No. 14) is said to be the model of the Ananda Pagoda. There are two compound walls, an inner and outer, of which the former only need be repaired; but this work may be held in abeyance till the necessary repairs to the pagoda itself have been executed. These will consist in clearing away vegetation, and making the roof water-tight. The battlements on the roof need not be restored, and no attempt should be made to renew the terra-cotta tiles. It would be an advantage to rebuild the eastern end of the porch, as well as the foundation on its eastern side.

Photos. 20 & 21. 67. The *Sulamani Pagoda* (No. 15) is a building of splendid proportions, the conservation of which will entail work on an extensive scale, and it will be well therefore if the expenditure can be spread over a number of years. The platform should be cleared of all grass, and all trees with the exception of a few shady ones, should be destroyed. It should be laid down as a principle that no images or statues should be restored, and that old plaster and mouldings

should be preserved as far as possible by edging them carefully with strong cement. Wherever new plaster is necessary, its colour should be toned down to harmonize with the old; this can generally be effected by mixing powdered cocoanut charcoal as one of its ingredients. In the case of images and statues in a state of disrepair, they should be left alone, but the pedestals, on which they stand, should, if broken, be repaired.

Outside the building, all overhanging masonry should either be cut off flush or underpinned; and all vegetation growing on the walls should be eradicated. Much of the stone flooring in the central chamber (eastern entrance) is fairly well preserved. The missing portion should be restored in stone, the stone flooring being carried halfway inside the aisles The flooring in the main corridors need not be repaired in stone. It originally consisted of a stone pavement resting on a brick foundation. The stone work is much dilapidated and may be removed, leaving bare the brick foundation, which should be repaired. The low wall in front of the image of Buddha facing east may be repaired in brick to its original level.

Neither in the central chamber nor in any other part of the building should the plaster on the surface of the vault or of the walls be repaired; the patches of old brick work may be left exposed as they are.

On the upper storey, the vegetation should be destroyed, and the terrace repaired. Proper provision should be made for the drainage of rain water. The battlements on the walls should also be restored and made water-tight.

68. The *Damayangyi* is the biggest building at Pagan. About 200 hundred years ago, a pongyi, who was an alchemist, established his laboratory here, and is said to have suceeded in transmuting the baser metals into gold. Heaps of ashes as if from a forge are still pointed out to the visitor in the corridors, and people say that small grains of gold can be recovered by washing them.

The explanation of all this seems to be that the pongyi penetrated into the relic chamber and melted-down the gold, which he found inside it. The main and intermediate entrances to the central chamber were afterwards bricked up—by the pongyi it is said—and one of these might now be opened in order to see if there is anything of interest within. This work, if undertaken, should be personally supervised by the Government Archæologist.

In conserving the main building, the same general principles should be followed as in the case of other pagodas. Underpinning should be resorted to at the corners or wherever it is necessary, and the loose or fallen brick-work of some of the arches above the doorways or niches should be restored. There are structural cracks in the building caused by settlement in the foundations; but they are not serious and may be simply filled in with mortar, or brick-work. The holes where the natives have been excavating for treasure, should be closed up

and the brick-work generally should be maintained in its present condition as far as possible. In many instances, however, it will be necessary to dismantle brick work, which is badly dilapidated. Our principle should be to cut away the unsound portions of the brick-work, and conserve the sound ones by making them water-tight. To rid the building of the bats with which it is infested, thorn bushes should be hung in the gateways.

The roof is in too ruinous a condition to justify any work of repair being undertaken. It will be sufficient if it is made water-tight as far as that may be practicable.

The steps on all sides of the building will require slight repairs, and, if a model is wanted, those in the interior of the side-aisles, which are in a good state of preservation, may be copied.

Around the pagoda are two circuit walls, in the outer one of which are gaps, where cactus trees have grown. These trees may be left alone, but where no protection exists across the gaps, wooden fencing may be erected for keeping out the cattle. It is not necessary to repair the brick walls. The space between the outer walls and the platform should be cleared of jungle; but the débris lying about is altogether too extensive to be cleared away, and only such of it as is lying on the platform itself should be removed.

Photo. 22. 69. The *Thabyinnyu Pagoda* is already on the A list, and has just been repaired by the Public Works Department. The images of Buddha have received a coating of yellow, and their eyes and eyebrows have been repainted in hideous fashion. The images should, of course, have been left untouched, but I doubt if anything can be done now to rectify the mischief. In the case of this pagoda the surrounding wall should I think be roughly repaired.

70. The small pagoda called *Nga-kywe-Nadaung*, covered with green glazed tiles, is of an elongated bulbous shape, which bespeaks its great antiquity. Such a unique monument certainly deserves to be preserved, and this can be effected in a general way by strengthening the base with brick-work and by filling in gaps and crevices. The pagoda should be made water-tight and any loose tile-work should be firmly cemented in position with red coloured cement.

71. The *Patothamya Pagoda* is said to have been built before the Ananda, *i.e.*, before the influence of the southern school of Buddhism reached Pagan. A considerable historical interest attaches to it, and its conservation appears to be expedient.

72. The *Mingalasedi* is a bell-shaped, cylindrical building, whose three terraces are adorned with terra-cotta tiles. Its walls are built of bricks, on which lines of Pali verses setting forth the history of the pagoda are inscribed; there appear to be hundreds of duplicates among these bricks, and one or two complete sets should be collected and photographed, and an attempt made to recover from them a connected history of the building. It was from this pagoda that about a hundred years ago King Bodawpaya removed many of the ornamental tiles, and it was from this same pagoda also that certain Germans

in 1899 succeeded in carrying off a great number of those which were left. As regards the measures needed for its preservation, they should be carried out under the direct supervision of the Archæological Department, since much of the work (especially that which relates to the repair of the tile-work) will be of a somewhat technical nature. The outer wall should be roughly built up in order to keep out cattle; all débris on the platform should be cleared, and jungle cut down; the platform itself, whose exterior face is adorned with tiles, should be repaired, and fallen tiles should be searched for in the débris. All the tiles let into the wall of the platform, as well as those found in the débris, should be removed to the Pagan Museum for safety. The plaster work on the pagoda need not be renewed; but dilapidations including holes made by treasure seekers, should be made good; the terraces should be made water-tight; and the battlements on them should be restored. It should be noted that only the tiles from around the platform are to be removed to the Museum, and that those inserted in the walls of the pagoda itself are to remain in their present position.

A Proc., Aug. 1900, Nos. 1 to 7.

A Proc., Dec. 1900, Nos. 3 and 4.

Some difficulty will be experienced in repairing the panels, in which the tiles are set. In some cases half the tiles are missing or only a few fragments remain, and in some cases the brick of the recess has been chipped away. It will be sufficient if the repairs are carried out in cement, provided that it is toned down to a harmonious tint by mixing yellow ochre, charcoal or other ingredient with it. Formerly the surface plaster was painted, but the paintings cannot now, of course, be renewed. Great care should be taken not to let any of the plaster overspread the surface of the tiles. The rough white mortar, with which some of the tiles recovered from the Germans were reset, should be carefully cut away. The three enamelled lotus tiles, wrongly reset here by the pagoda durwans, should be removed and deposited in the Museum. Any bricks that may be required in the conservation work may be obtained by dismantling the most dilapidated of the small buildings in the courtyard.

73. On the lower terrace of the *Somingyi Pagoda* are many tiles, some of which have fallen out of the panels. These, and any others from pagodas in an advanced state of decay, should be removed for safety to the Pagan Museum. If any of these tiles can be spared, they might be exchanged for specimens of *kashi* tiles from the Indian Museums. A comparative examination of the various fabrics would undoubtedly prove instructive, and help to throw light on their respective origins.

74. There is a small pagoda at Thiripyitsaya called *Pet-leik-paya*, adorned with small earthenware tiles, which should also be removed to the Museum; and some measures might be taken for the preservation of the pagoda.

75. The foundations of the *Lawkananda Pagoda* are threatened on the river face and proposals have already been submitted by the Government Archæologist for its conservation. The opinion of the Public Works Department is needed as to whether the brick embankment on the river face requires to be strengthened.

I would not recommend a large outlay on this undertaking, but it might be worth while to spend, say, Rs. 1,000.

76. The *Mahabodhi Pagoda* is built on the model of the Temple at Buddha Gaya and is the only example of its style in Burma. I agree with the Archæologist that it deserves to be conserved.

77. The *Bupaya* or *Pumkin Pagoda* is in a fair state of preservation but has neither funds nor trustees, to maintain it. It might be included at once on the A list, though for the present no outlay of funds will be required.

78. I had no time to see the *Damayazika Pagoda*, which the Archæologist has put down in the B list, and am unable to offer any expression of opinion on the question of its conservation.

79. The *Shwezigôn Pagoda* is one of the holiest shrines in Upper Burma, possessing an income of some Rs. 3,000 which is said to balance the present expenditure. The central pagoda is in a very good state of preservation, but the outbuildings, approaches, etc., are in a ruinous condition, and an eyesore on the scene. All the débris should be cleared from the platform, and the unsightly outbuildings dismantled; the brick causeways leading to the pagoda should be put into better repair, and measures should be taken to prevent the erection of other incongruous buildings in the future. The trustees assert that they have no money with which to carry out more than the ordinary annual repairs; this is a matter which needs to be enquired into, and if their assertion is found to be correct, an application for financial assistance might be favourably considered.

80. An excellent beginning has been made by the Archæological assistant at Pagan in collecting antiquities for the new Museum. I understand that there are numbers of palm-leaf manuscripts to be obtained from the country people round about Pagan, and the assistant should make every effort to secure as good a collection of these as he can. As soon as the new Museum, which is now in course of construction, is ready, all ownerless and shelterless inscriptions should be removed to it as well as any sculptures, terra-cotta tiles, etc., which are not sufficiently protected in their present position. A small collection of archæological books, relative to the antiquities of Pagan, should also be made.

81. While I was at Pagan I took the opportunity of opening up one of the numberless small pagodas with the ruins of which the country is dotted over. The one selected was nothing more than a shapeless mass of brick-work (see photographs 23 and 24) in the village of Taungbi, known to the villagers as *Sudaungbye*, bu without a word of tradition or history clinging to it.

A vertical passage was dug in the centre of the mound, and bricks measuring 16″ × 8″ × 2″, were removed. Nothing was found till a depth of 9′ 8″ had been reached, when a smooth slab of stone, 4′ 2″ square, and 8″ thick, came to light and immediately below it was discovered a

small brick chamber measuring 3½′ square and 3½′ high. This was the relic-chamber, in which valuable articles are generally enshrined along with the sacred objects of worship. In this case, unfortunately, the chamber was found to have been previously rifled of all its valuables, a large hole in the southern side testifying to where the thieves had entered. There still remained, however, a vast number of votive tablets, of baked clay, adhering to the walls of the chamber where they had originally been fixed, or lying in confusion on the floor. These tablets are of three sizes, and stamped with impressions of Gautama Buddha sitting cross-legged in what appears to be the Temple at Buddha Gaya, and with a Sanskrit legend beneath him. The features of the Buddha are decidedly Indian, and the legends are well known Buddhist formulæ. In all, 153 small, 97 medium, and 10 large tablets were found. Two specimens of each kind have been forwarded to Dr. Vogel for examination and comparison with Indian specimens. The remaining tablets have been sent to the Archæological clerk for deposit in the Pagan Museum.

On further excavating the earth round the mound down to the natural ground level, it was found that the plinth measured 18 feet square ornamented with a projecting moulded cornice, and with a paving around at the ground level, consisting of a double layer of flat bricks. A plan, two sections and two photographs, showing what remains of this small pagoda, are attached. The total cost of this excavation was, I think, Rs. 13. There are dozens of other such pagodas, many of them completely hidden in their own accumulated débris, which might be opened at Pagan, and if only (as there is every reason to hope) some of them have escaped spoliation and preserved their relic-chambers intact, we may look forward to reaping perhaps the richest harvest of antiquities that has ever yet been recovered in India or Burma.

SIMLA;
The 15th July 1904.

J. H. MARSHALL.

G. C. Press, Simla.—No. 41 D, A. G.—12-8-04.—100—C. P.

PROCEEDINGS OF THE

DEPARTMENT OF REVENUE AND AGRICULTURE, SEPT., 1904.

Note on the work and organization of Provincial Service in Burma. [Pro. No. 7

No. 7. No. 2627, dated Simla, the 2nd September 1904. Serial No. 2.

From—L. ROBERTSON, Esq., Under-Secretary to the Government of India,

To—The Revenue Secretary to the Government of Burma.

I AM directed to forward, for the information of His Honour the Lieutenant-Governor, a copy of a general note dated the 15th July 1904 prepared by Mr. J. H. Marshall, Director General of Archæology in India, on the work and organization of the Provincial Archæological Survey in Burma, and to express a hope that the Local Government will give its careful attention to the suggestions contained in it. I am also to forward, in original, the plan and the 24 photographs referred to in the note which should be treated as carefully as possible and should be returned, when done with, to the Director General.

2. With regard to paragraph 35 of the note, I am to invite a reference to the correspondence ending with this Department's letter No. 1092—55-4, dated the 4th April 1903, and to say that the Government of India will await the proposals of the Lieutenant-Governor in connection with the revision of the local archæological establishment.

No. 2628.

COPY forwarded to the Director General of Archæology in India, for information, with reference to his letter No. 1057, dated the 13th August 1904.